

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

KAIFI LLC,

*Plaintiff,*

V.

Case No. 2:20-CV-00280-JRG

CELLCO PARTNERSHIP D/B/A VERIZON WIRELESS, VERIZON SERVICES CORP., VERIZON ENTERPRISE SOLUTIONS, LLC, VERIZON BUSINESS GLOBAL LLC, VERIZON BUSINESS NETWORK SERVICES, LLC, VERIZON CORPORATE SERVICES GROUP INC, VERIZON DATA SERVICES LLC, VERIZON MEDIA INC., VERIZON ONLINE LLC,

*Defendants.*

KAIFI LLC,

*Plaintiff,*

V.

Case No. 2:20-CV-00281-JRG

T-MOBILE US, INC. and T-MOBILE USA,  
INC.,

*Defendants.*

## CLAIM CONSTRUCTION MEMORANDUM OPINION AND ORDER

On June 3, 2021, the Court held a hearing to determine the proper construction of the disputed claim terms in U.S. Patent No. 6,922,728 (“728 Patent”). Shortly before the start of the June 3, 2021 hearing, the Court provided the parties with preliminary constructions with the aim of focusing the parties’ arguments and facilitating discussion. It is helpful to understand the ‘728

Patent was recently construed and a number of the currently disputed terms were previously construed in the Claim Construction Order in *KAIFI LLC v. AT&T Corp., et al.*; Case No. 2:19-cv-00138-JRG (“AT&T Case”). Having reviewed the arguments made by the parties at the hearing and in their claim construction briefing (Dkt. Nos. 56, 57, 60, 135, 139, 143)<sup>1</sup>, having considered the intrinsic evidence, and having made subsidiary factual findings about the extrinsic evidence, the Court hereby issues this Claim Construction Memorandum Opinion and Order. *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005) (en banc); *see also Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 841 (2015).

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<sup>1</sup> Citations to the parties’ filings are to the filing’s number in the docket (Dkt No.) and pin cites are to the page numbers assigned through ECF. Docket Nos. 56, 57, 60 refer to the briefing in Case No. 2:20-CV-00280, and Docket Nos. 135, 139, 143 refer to the briefing in Case No. 2:20-CV-00281.

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## **I. BACKGROUND**

Plaintiff KAIFI LLC alleges that Defendants T-Mobile US, Inc.; T-Mobile USA, Inc.; Verizon Communications Inc.; Cellco Partnership D/B/A Verizon Wireless; Verizon Services Corp.; Verizon Enterprise Solutions LLC; Verizon Business Global LLC; Verizon Business Network Service LLC; Verizon Corporate Services Group Inc.; Verizon Data Services LLC; Verizon Media Inc.; and Verizon Online LLC infringe the ‘728 Patent.

The ‘728 Patent, titled “Optimal Internet Network Connecting and Roaming System and Method Adapted for User Moving Outdoors or Indoors,” issued on July 26, 2005. The application for the ‘728 Patent was filed on December 18, 2001 and claims priority to Korean Patent Application No. 2001-34976, filed on June 20, 2001. Plaintiff submits: “The claimed invention enables automatic and uninterrupted switching of communication services between different network types, an indoor network (Wi-Fi) and an outdoor wireless internet network (cellular).” Dkt. No. 135 at 5; Dkt. No. 56 at 5. The Abstract of the ‘728 Patent states:

The present invention relates to an internet network connecting and roaming system and method providing internet communication service to a data communication carried by a user moving indoors or outdoors. In the present invention, the user is provided with a communication service by connecting with an outdoor wireless internet network such as an outdoor wireless LAN or packet network when the user is located outdoors. Then, upon receiving indoor system ID information, it is determined whether the received indoor system ID information is identical to stored indoor system ID information. If the two indoor system ID informations are identical to each other, the communication route of the data communication terminal is switched from the outdoor wireless internet network to the indoor gateway, and makes wireless communications with the indoor gateway through an indoor wireless connection module. Before the switching of the communication route, the location of the data communication terminal is authenticated by a location register and stored therein.

Claim 1 of the ‘728 Patent is an exemplary claim and recites the following elements (disputed terms in *italics*):

1. An internet network connecting and roaming system providing internet communication service to a data communication

terminal of a user moving indoors or outdoors, using an outdoor wireless internet network including an antenna, a router and a location register, and an *indoor network* including an indoor gateway connectable with an internet network, the system comprising:

- a data communication terminal that includes an indoor wireless connection module and stores *registered indoor system ID information*, so that the data communication terminal may be connected with *the indoor network* if the *registered indoor system ID information* is received and by connecting with the outdoor wireless internet network if *the registered indoor system ID information* is not received;
- an indoor gateway that includes an indoor wireless connection module therein, broadcasts the indoor system ID information, makes wireless communications with the data communication terminal through the indoor wireless connection module, and is connected with the internet network via a wire;
- a *location register that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network*; and
- a router that determines the location of the data communication terminal stored in the location register and provides roaming of voice/data signals provided to the user by selecting one of the indoor and the outdoor networks *in accordance with the determined location of the data communication terminal*.

## I. APPLICABLE LAW

### A. Claim Construction

“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc) (quoting *Innova/Pure Water Inc. v. Safari Water Filtration Sys., Inc.*, 381 F.3d 1111, 1115 (Fed. Cir. 2004)). To determine the meaning of the claims, courts start by considering the intrinsic evidence. *Id.* at 1313; *C.R. Bard, Inc. v. U.S. Surgical Corp.*, 388 F.3d 858, 861 (Fed. Cir. 2004); *Bell Atl. Network Servs., Inc. v. Covad Commc’ns Grp., Inc.*, 262 F.3d 1258, 1267 (Fed. Cir. 2001). The intrinsic evidence includes the claims themselves, the specification, and the prosecution history. *Phillips*, 415 F.3d at 1314; *C.R. Bard, Inc.*, 388 F.3d at

861. The general rule—subject to certain specific exceptions discussed *infra*—is that each claim term is construed according to its ordinary and accustomed meaning as understood by one of ordinary skill in the art at the time of the invention in the context of the patent. *Phillips*, 415 F.3d at 1312–13; *Alloc, Inc. v. Int’l Trade Comm’n*, 342 F.3d 1361, 1368 (Fed. Cir. 2003); *Azure Networks, LLC v. CSR PLC*, 771 F.3d 1336, 1347 (Fed. Cir. 2014) (quotation marks omitted) (“There is a heavy presumption that claim terms carry their accustomed meaning in the relevant community at the relevant time.”) *cert. granted, judgment vacated*, 135 S. Ct. 1846 (2015).

“The claim construction inquiry . . . begins and ends in all cases with the actual words of the claim.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1248 (Fed. Cir. 1998). “[I]n all aspects of claim construction, ‘the name of the game is the claim.’” *Apple Inc. v. Motorola, Inc.*, 757 F.3d 1286, 1298 (Fed. Cir. 2014) (quoting *In re Hiniker Co.*, 150 F.3d 1362, 1369 (Fed. Cir. 1998)) *overruled on other grounds by Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015). First, a term’s context in the asserted claim can be instructive. *Phillips*, 415 F.3d at 1314. Other asserted or unasserted claims can also aid in determining the claim’s meaning, because claim terms are typically used consistently throughout the patent. *Id.* Differences among the claim terms can also assist in understanding a term’s meaning. *Id.* For example, when a dependent claim adds a limitation to an independent claim, it is presumed that the independent claim does not include the limitation. *Id.* at 1314–15.

“[C]laims ‘must be read in view of the specification, of which they are a part.’” *Id.* (quoting *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995) (en banc)). “[T]he specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’” *Id.* (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996)); *Teleflex, Inc. v. Ficosa N. Am. Corp.*,

299 F.3d 1313, 1325 (Fed. Cir. 2002). This is true because a patentee may define his own terms, give a claim term a different meaning than the term would otherwise possess, or disclaim or disavow the claim scope. *Phillips*, 415 F.3d at 1316. In these situations, the inventor's lexicography governs. *Id.*

The specification may also resolve ambiguous claim terms “where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone.” *Teleflex, Inc.*, 299 F.3d at 1325. But, “[a]lthough the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims.” *Comark Commc'ns, Inc. v. Harris Corp.*, 156 F.3d 1182, 1187 (Fed. Cir. 1998) (quoting *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571 (Fed. Cir. 1988)); see also *Phillips*, 415 F.3d at 1323. “[I]t is improper to read limitations from a preferred embodiment described in the specification—even if it is the only embodiment—into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 913 (Fed. Cir. 2004).

The prosecution history is another tool to supply the proper context for claim construction because, like the specification, the prosecution history provides evidence of how the U.S. Patent and Trademark Office (“PTO”) and the inventor understood the patent. *Phillips*, 415 F.3d at 1317. However, “because the prosecution history represents an ongoing negotiation between the PTO and the applicant, rather than the final product of that negotiation, it often lacks the clarity of the specification and thus is less useful for claim construction purposes.” *Id.* at 1318; see also *Athletic Alts., Inc. v. Prince Mfg.*, 73 F.3d 1573, 1580 (Fed. Cir. 1996) (ambiguous prosecution history may be “unhelpful as an interpretive resource”).

Although extrinsic evidence can also be useful, it is “less significant than the intrinsic record in determining the legally operative meaning of claim language.” *Phillips*, 415 F.3d at 1317 (quoting *C.R. Bard, Inc.*, 388 F.3d at 862). Technical dictionaries and treatises may help a court understand the underlying technology and the manner in which one skilled in the art might use claim terms, but technical dictionaries and treatises may provide definitions that are too broad or may not be indicative of how the term is used in the patent. *Id.* at 1318. Similarly, expert testimony may aid a court in understanding the underlying technology and determining the particular meaning of a term in the pertinent field, but an expert’s conclusory, unsupported assertions as to a term’s definition are not helpful to a court. *Id.* Extrinsic evidence is “less reliable than the patent and its prosecution history in determining how to read claim terms.” *Id.* The Supreme Court has explained the role of extrinsic evidence in claim construction:

In some cases, however, the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period. *See, e.g., Seymour v. Osborne*, 11 Wall. 516, 546 (1871) (a patent may be “so interspersed with technical terms and terms of art that the testimony of scientific witnesses is indispensable to a correct understanding of its meaning”). In cases where those subsidiary facts are in dispute, courts will need to make subsidiary factual findings about that extrinsic evidence. These are the “evidentiary underpinnings” of claim construction that we discussed in *Markman*, and this subsidiary factfinding must be reviewed for clear error on appeal.

*Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 331–32 (2015).

### **B. Departing from the Ordinary Meaning of a Claim Term**

There are “only two exceptions to [the] general rule” that claim terms are construed according to their plain and ordinary meaning: “1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of the claim term either



in the specification or during prosecution.”<sup>2</sup> *Golden Bridge Tech., Inc. v. Apple Inc.*, 758 F.3d 1362, 1365 (Fed. Cir. 2014) (quoting *Thorner v. Sony Comput. Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)); *see also GE Lighting Sols., LLC v. AgiLight, Inc.*, 750 F.3d 1304, 1309 (Fed. Cir. 2014) (“[T]he specification and prosecution history only compel departure from the plain meaning in two instances: lexicography and disavowal.”). The standards for finding lexicography or disavowal are “exacting.” *GE Lighting Sols.*, 750 F.3d at 1309.

To act as his own lexicographer, the patentee must “clearly set forth a definition of the disputed claim term,” and “clearly express an intent to define the term.” *Id.* (quoting *Thorner*, 669 F.3d at 1365); *see also Renishaw*, 158 F.3d at 1249. The patentee’s lexicography must appear “with reasonable clarity, deliberateness, and precision.” *Renishaw*, 158 F.3d at 1249.

To disavow or disclaim the full scope of a claim term, the patentee’s statements in the specification or prosecution history must amount to a “clear and unmistakable” surrender. *Cordis Corp. v. Bos. Sci. Corp.*, 561 F.3d 1319, 1329 (Fed. Cir. 2009); *see also Thorner*, 669 F.3d at 1366 (“The patentee may demonstrate intent to deviate from the ordinary and accustomed meaning of a claim term by including in the specification expressions of manifest exclusion or restriction, representing a clear disavowal of claim scope.”). “Where an applicant’s statements are amenable to multiple reasonable interpretations, they cannot be deemed clear and unmistakable.” *3M Innovative Props. Co. v. Tredegar Corp.*, 725 F.3d 1315, 1326 (Fed. Cir. 2013).

### **C. Definiteness Under 35 U.S.C. § 112, ¶ 2 (pre-AIA) / § 112(b) (AIA)**

Patent claims must particularly point out and distinctly claim the subject matter regarded as the invention. 35 U.S.C. § 112, ¶ 2. A claim, when viewed in light of the intrinsic evidence,

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<sup>2</sup> Some cases have characterized other principles of claim construction as “exceptions” to the general rule, such as the statutory requirement that a means-plus-function term is construed to cover the corresponding structure disclosed in the specification. *See e.g., CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1367 (Fed. Cir. 2002).

must “inform those skilled in the art about the scope of the invention with reasonable certainty.” *Nautilus Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014). If it does not, the claim fails § 112, ¶ 2 and is therefore invalid as indefinite. *Id.* at 901. Whether a claim is indefinite is determined from the perspective of one of ordinary skill in the art as of the time the application for the patent was filed. *Id.* at 911. As it is a challenge to the validity of a patent, the failure of any claim in suit to comply with § 112 must be shown by clear and convincing evidence. *BASF Corp. v. Johnson Matthey Inc.*, 875 F.3d 1360, 1365 (Fed. Cir. 2017). “[I]ndefiniteness is a question of law and in effect part of claim construction.” *ePlus, Inc. v. Lawson Software, Inc.*, 700 F.3d 509, 517 (Fed. Cir. 2012).

When a term of degree is used in a claim, “the court must determine whether the patent provides some standard for measuring that degree.” *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1378 (Fed. Cir. 2015) (quotation marks omitted). Likewise, when a subjective term is used in a claim, “a court must determine whether the patent’s specification supplies some standard for measuring the scope of the [term].” *Ernie Ball, Inc. v. Earvana, LLC*, 502 F. App’x 971, 980 (Fed. Cir. 2013) (citations omitted). The standard “must provide objective boundaries for those of skill in the art.” *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014).

## II. THE PARTIES’ STIPULATED TERMS

The parties agreed to the construction of the following term in their P.R. 4-5(d) Joint Claim Construction Charts.

| Claim Term/Phrase  | Agreed Construction  |
|--|--|
| “outdoor wireless internet network”<br>(all asserted claims) | “a wireless network that provides a different network path to internet connectivity than the indoor network” |
| “location register”<br>(all asserted claims)                 | “register that records the location of the data communication terminal”                                      |

|   |   |
|---|---|
| “indoor system ID information”<br>(all asserted claims)                             | “information uniquely identifying the indoor network”   |
| “location information”<br>(all asserted claims)                                     | “information on a locational area or indoor system ID information or both”                                    |
| “provides roaming of voice/data signals provided to the user”<br>(claims 1-7, 9-11) | “provides switching the network path of the voice/data communications automatically and without interruption” |

Dkt. No. 63-1 at 4-5 in Case No. 2:20-cv-280; Dkt. No. 145-1 at 15-16 in Case No. 2:20-cv-281.

In view of the parties’ agreement on the proper construction of the identified terms, the Court hereby **ADOPTS** the parties’ agreed constructions.

### III. CONSTRUCTION OF DISPUTED TERMS

The parties’ dispute the meaning and scope of eight terms or phrases in the ‘728 Patent. Each dispute is addressed below.

#### A. “indoor network”

| <u>Disputed Term</u> | <u>Plaintiff’s Proposal</u>   | <u>Defendants’ Proposal</u> |
|----------------------|---|-----------------------------|
| “indoor network”     | “a network that broadcasts system ID information able to be received within an interior of a structure” | Plain and ordinary meaning. |

#### 1. The Parties’ Positions

The parties dispute the meaning of the term “indoor network.” The Court construed the term “indoor network” in the AT&T Case, and Plaintiff proposes the same construction. *See* AT&T Case, Dkt. No. 104 at 18. Defendants contend that the term “indoor network” needs no construction and should be given its plain and ordinary meaning. Citing to the Court’s prior claim construction analysis, Plaintiff argues that the asserted claims include two different networks, an

“indoor network” and an “outdoor wireless internet network.” Dkt. No. 135 at 10 (citing AT&T Case, Dkt. No. 104 at 13; Dkt. No. 135-9 ¶ 37). Plaintiff contends that the “indoor network” is a network that broadcasts system ID information able to be received within an interior of a structure. *Id.* at 11 (citing Dkt. No. 135-9 ¶¶ 40, 41; ‘728 Patent at 4:64–5:8, 13:41–43, 14:62–65; AT&T Case, Dkt. No. 104 at 13, 17).

Plaintiff submits that Defendants argue that the Court’s construction is “overinclusive,” because “[p]ractically any network is ‘able to be received within an interior of a structure...,’” including 2G and 3G cellular networks. *Id.* (citing Dkt. No. 135-7 ¶¶ 52, 53). Plaintiff agrees that 2G and 3G networks are not “indoor networks,” but argues that has nothing to do with their broadcasting range. *Id.* at 12. Plaintiff also argues that 2G and 3G networks cannot be “indoor networks,” because they do not broadcast system ID information. *Id.* (citing Dkt. No. 135-9 ¶ 45). Plaintiff submits that Defendants’ contention that this term needs no construction and would only invite confusion. *Id.* Plaintiff contends Mr. Rysavy’s assertion that an “indoor network” must have a short broadcasting range designed for indoor use is not factually correct. *Id.* (citing Dkt. No. 135-7 ¶ 53; Dkt. No. 135-9 ¶ 46; ‘728 Patent at 6:6–28).

Defendants respond that the Court’s construction of “indoor network” from the AT&T Case unintentionally introduced ambiguity into the otherwise clear distinction between “indoor” and “outdoor” networks. Dkt. No. 139 at 10-11. Defendants argue that the construction would allow Plaintiff to treat “outdoor” networks—like 3G and LTE cellular networks—as “indoor networks.” *Id.* at 11. Defendants contend that the intrinsic disclosures of the ‘728 Patent afford a jury ample guidance in distinguishing between these two types of networks. *Id.* According to Defendants, the specification provides clear guidance on the plain and ordinary meaning of “indoor network.” *Id.* (citing ‘728 Patent at 4:64–5:1, 8:52–55, 9:7–11, 10:1–4, 2:60–63, 3:5–8).

Defendants further contend that Plaintiff's proposal allows any network to be an "indoor network," so long as it broadcasts "system ID information." *Id.* at 11-12 (citing Dkt. No. 139-2 ¶ 52; Dkt. No. 139-3 at 70:12-14). Defendants argue that it cannot be reasonably disputed that outdoor cellular networks broadcast "information uniquely identifying the network." *Id.* at 12-13 (citing Dkt. No. 139-5 at 9, 13; Dkt. No. 139-3 at 70:6-11; Dkt. No. 139-4 at 14, 22). Defendants submit that an indoor network does not broadcast generic "system ID information," but instead broadcast "indoor system ID information." *Id.* at 13 (citing '728 Patent at 3:17-22, 9:3-12). Defendants also contend that they seek to clarify the intent behind this Court's prior construction. *Id.* According to Defendants, the simplest means of doing so is returning to the plain meaning and clear disclosures of the specification. *Id.* (citing '728 Patent at 3:23-47, 8:40-43, 10:5-13, 11:39-50, 13:12-15).

Plaintiff did not submit arguments regarding this term in its Reply brief.

## **2. Analysis**

The term "indoor network" appears in Claims 1, 5, and 12 of the '728 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. In the AT&T Case, the Court construed the term "indoor network" to mean "a network that broadcasts system ID information able to be received within an interior of a structure." The Court finds that this construction can be further clarified by specifying that the "system ID information" is the "indoor system ID information." The term "indoor system ID information" is a term recited in the claims, and indicates that the "broadcasted system ID information" is the system ID information of the indoor network. Moreover, the parties agree that the term "indoor system ID information" means "information uniquely identifying the indoor network." Dkt. No. 145-1 at 15. This is the construction provided by the Court in the AT&T Case,

and resolves Defendants’ argument that the construction of “indoor network” from the AT&T Case includes the undefined term “system ID information.” Dkt. No. 139 at 11.

In a footnote, Defendants argue that this modification creates an unhelpful circular construction. Dkt. No. 139 at 13 n.3. The Court disagrees. There will never be a “perfect” construction. Moreover, providing the “plain and ordinary meaning” will not resolve the parties’ claim construction dispute. Thus, for the reasons discussed in the AT&T Case’s Claim Construction Order, and for the reasons discussed above, the Court construes “indoor network” to mean “a network that broadcasts indoor system ID information able to be received within an interior of a structure.” *See* AT&T Case, Dkt. No. 104 at 10-18.

Plaintiff argues that the defining characteristic of an “indoor network” is that it broadcasts system ID information that can be received in the interior of a structure. Defendants respond that “broadcasts system ID information” is an undefined term and could be argued to include “outdoor” networks—like 3G and LTE cellular networks. Dkt. No. 139 at 11-12. The Court finds that this is not an issue, because Plaintiff agrees that 2G and 3G networks are not “indoor networks.” In its briefing and during the claim construction hearing, Plaintiff represented to the Court that it has no intention of expanding indoor networks to include cellular networks. Dkt. No. 135 at 11. Moreover, as indicated with the modified construction, the system ID information that is broadcasted is the “indoor system ID information.” Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

### 3. Court’s Construction

For the reasons set forth above, the Court construes the term **“indoor network”** to mean **“a network that broadcasts indoor system ID information able to be received within an**

interior of a structure.”

**B. “location register that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network”**

| <u>Disputed Term</u>   | <u>Plaintiff’s Proposal</u>   | <u>Defendants’ Proposal</u>   |
|--|---|---|
| “location register that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network” | “location register” should be construed as “register that records the location of the data communication terminal.” The remainder of this term does not require construction. | “location register external to the data communication terminal that stores location information of the data communication terminal” |

**1. The Parties’ Positions**

The parties dispute whether the claimed “location register” is external to the data communication terminal, as Defendants propose, or whether the “location register” may be part of the data communication terminal, as Plaintiff proposes. The Court construed the term “location register” in the AT&T Case. AT&T Case, Dkt. No. 104 at 42. Plaintiff proposes the same construction. The parties’ dispute in the AT&T Case was whether the “location register” must record a “current location of a data communication subscriber.”

Plaintiff argues that Defendants now seek to narrow the Court’s construction by adding the additional requirement that the location register have a single physical location by proposing that this single location be “external” to the data communication terminal (*e.g.*, external to a mobile phone). Dkt. No. 135 at 12-13. Plaintiff submits that neither the specification nor the claims require a location register be a single physical structure. *Id.* at 13 (citing Dkt. No. 135-9 ¶ 54). Plaintiff asserts that Claim 1 leaves open the possibility that one or more subparts of the system can be implemented as separate infrastructure elements or grouped together into one or more physical units. *Id.*

Plaintiff also argues that Figures 1-2 show an embodiment in which there is employed an “HA/FA Location Register.” *Id.* According to Plaintiff, HA/FA refer to “home agent” / “foreign agent.” *Id.* (citing Dkt. No. 135-6 at 44:1-17). Plaintiff reasons that this confirms that the boxes and circles in Figures 1-2 are not intended to represent single physical structures, because they are distinct software programs that can run on any general purpose computer. *Id.* (citing ‘728 Patent at 9:12–15; Dkt. No. 135-9 ¶ 61; Dkt. No. 135-16 at 5). Plaintiff asserts that the RFC 2002 document that Dr. Rysavy relies on places no limits on where the home agent and foreign agent are physically located. *Id.* at 14 (Dkt. No. 135-9 ¶ 61; Dkt. No. 135-1 ¶ 8, Dkt. No. 135-8 at 5; Dkt. No. 135-7 ¶ 47). According to Plaintiff, Mr. Rysavy admitted that the RFC 2002 specification he relies on does not discuss the physical implementation of the home agent / foreign agent. *Id.* (Dkt. No. 135-6 at 48:3-24).

Plaintiff further argues that the concept of distributed storage of data, as well as the distribution of network functions like the location register, across multiple physical locations was well known. *Id.* at 15 (citing Dkt. No. 135-9 ¶¶ 55-58; Dkt. No. 135-15). According to Plaintiff, there is nothing present in either the claims or the specification that forecloses the possibility of the functions of the location register being distributed across more than one network element. *Id.* Plaintiff contends that Defendants’ expert makes clear that the only requirement for the location register is that it must be at a “known networking location.” *Id.* (citing Dkt. No. 135-6 at 42:23-43:5, 42:7-12, 47:5-7, 47:8-14). Plaintiff submits that Mr. Rysavy’s deposition testimony makes clear that the location register can be a distributed function, and that the known network location can be supplied by a mobile device. *Id.* at 16 (citing Dkt. No. 135-6 at 100:21-101:4).

Plaintiff also submits that there is nothing present in either the specification or the claims that requires the location register to be implemented as a “centralized database.” *Id.* at 16-17 (citing



Dkt. No. 135-9 ¶ 64). Plaintiff claims that Defendants’ expert made clear that the “location register” was a “function,” and that he had no opinion as to whether the claims limited this function to a particular physical implementation. *Id.* at 17 (citing Dkt. No. 135-6 at 34:20-25, 43:6-43:20, 55:6-13, 54:10-16). Plaintiff also claims that Mr. Rysavy appears to hold the mistaken opinion that the data communication terminal is coextensive with the location register. *Id.* at 18-19 (citing Dkt. No. 135-9 ¶¶ 43-44, 48). Plaintiff argues that its construction recognizes that the network functionality and/or data storage associated with the location register function is not limited to any specific physical location. *Id.* at 19.

Plaintiff further contends that a mobile terminal must define its location with relation to other network elements, for example, a satellite, a Wi-Fi base station, or a cellular base station. *Id.* (citing Dkt. No. 135-9 ¶¶ 57, 62; Dkt. No. 135-17; Dkt. No. 135-6 at 25:4-18, 89:4-90:3). Plaintiff argues that the idea that a terminal is going to transmit location information and have no role in storing that information has no connection to any known mobile terminal. *Id.* at 20 (citing Dkt. No. 135-9 ¶ 62; Dkt. No. 135-6 at 34:23-35:7).

Defendants respond that the intrinsic record confirms that the data communication terminal and location register are separate entities, meaning that the data communication terminal sends information to (but is not part of) the location register. Dkt. No. 139 at 14-15. Defendants argue that Claim 1 treats the location register as a separate component from the data communication terminal that is located in “an outdoor wireless internet network” *Id.* at 15 (citing ‘728 Patent at 15:9–16). Defendants submit that the body of Claim 1 recites “a data communication terminal” as a separate element from “a location register.” *Id.* (citing ‘728 Patent at 15:17–24, 15:31–34). Defendants further submit that the claims contemplate one element—a location register—receiving and storing information about a separate element—a data communication terminal. *Id.*

at 16. Defendants argue that dependent Claim 4 is further evidence that the location register in Claim 1 is external to the data communication terminal. *Id.* (citing ‘728 Patent at 15:53–62).

Defendants also argue the specification consistently describes the location register as external to the data communication terminal. *Id.* at 17. Defendants contend that the location register of the “present invention” must necessarily be external to the data communication terminal, because the location register receives information “transmitted from the wireless internet terminal.” *Id.* Defendants further contend that the data communication terminal would not “transmit” information to the location register if it were part of the location register already. *Id.* Defendants explain that the purpose of storing location information of the data communication terminal in a location register is to allow a router to determine from the location register where to route an in-process communication. *Id.* (citing ‘728 Patent at 3:9–15).

Defendants also argue that the Detailed Description of the Invention shows that the location register is external to the data communication terminal. *Id.* at 18 (citing ‘728 Patent at Figs. 1a, 1b, 2). Defendants submit that the specification explicitly describes the “location register” as part of an “external network,” which includes the internet, internet servers, a VoIP gateway, and a PSTN. *Id.* (citing ‘728 Patent at 8:31–9:25, 11:34–38, 11:55–63, 12:59–65, 14:14–17, Fig. 2).

Defendants further argue that every embodiment in the specification describes a procedure by which the data communication terminal registers its location into the location register. *Id.* According to Defendants, this would be unnecessary if the data communication terminal were part of the location register. *Id.* at 19–20 (citing ‘728 Patent at 9:47–53, 11:30–33, 12:66–13:3, 14:8–12, Figs. 4–6). Defendants contend that the location register is treated as an entity separate from the data communication terminal throughout the specification. *Id.* at 20 (citing ‘728 Patent at Abstract, 3:9–16, 3:40–42, 6:34–40, 6:48–53, 9:47–53, 11:30–33). Defendants argue that Plaintiff

has not cited a single embodiment in which the specification describes the data communication terminal as part of the location register. *Id.* at 21 (citing Dkt. No. 139-3 at 70:24–71:5, 72:15–17, 74:1–5, 76:19–25, 82:1–2).

According to Defendants, the that Korean Application No. 2001-0034976 further confirms that the location register is external to the data communication terminal. *Id.* at 21-22 (citing Dkt. No. 139-7 ¶¶ 19, 29). Defendants state that Plaintiff has admitted that the claimed “location register” is external to the data communication terminal. *Id.* at 22-23 (citing Dkt. No. 139-6 at 16 n.11; Dkt. No. 85 at 6; Dkt. No. 77 at 5). Defendants believe that these admissions are the exact opposite of what Plaintiff now argues. *Id.* at 23. Defendants submit that Plaintiff’s brief does not rebut the conclusive intrinsic evidence. *Id.* at 24 (citing ‘728 Patent at 3:9–11).

Defendants also submit that there is nothing in the specification that suggests a distributed location register. *Id.* at 24-25 (citing ‘728 Patent at 3:9–15; Dkt. No. 139-2 ¶¶ 46–47). Defendants also contend that whether the claimed location register must be a single physical structure is not relevant to the central dispute. *Id.* at 25. Defendants further submit that their construction does not preclude the data communication terminal from storing location information prior to transmitting it to the location register. *Id.* According to Defendants, the act of storing and then transmitting location information to a location register does not turn the data communication terminal itself into the claimed location register. *Id.*

Plaintiff replies that when the patentee wanted to require a specific association between components, the patentee knew exactly how to do so. Dkt. No. 143 at 2 (citing ‘728 Patent at Claim 1). According to Plaintiff, mobile devices do not self-generate location information. *Id.* at 2-3. Plaintiff contends that the system ID is location information in the register and is received by the mobile device from the indoor network. *Id.* at 3 (citing ‘728 Patent at 3:34-36, 7:26-50; Dkt.

No. 143-1 at 89:4-90:3). Plaintiff further contends that the preamble says nothing about where in the outdoor network the location register is physically situated. *Id.*

Plaintiff asserts that the specification makes clear that the location register is a not a specific physical structure. *Id.* (citing ‘728 Patent at 3:9–13, 3:16–23, 3:27–30). According to Plaintiff, the location information which is stored on the terminal is in “a location register.” *Id.* at 3-4 (citing ‘728 Patent at 3:63–67, 8:47–55, 4:23–25, 13:4–7, 12:59–65). Plaintiff argues that in Figures 1 and 2 the location register is not a single physical structure distinct from any other element of the system. *Id.* (citing Dkt. No. 143-1 at 82:14-21; ‘728 Patent at 4:28–31).

Plaintiff also argues that there is no limitation regarding the placement of the location register. *Id.* at 4 (citing ‘728 Patent at 7:48–50). Plaintiff believes that since Figure 2 is described as “an embodiment of the present invention,” and this affirms that the embodiment is not limiting. *Id.* at 5 (citing ‘728 Patent at 9:12–15). Plaintiff contends that the only requirement of the location register is that it have a “known networking location,” and that mobile devices have known networking locations. *Id.* (citing Dkt. No. 139-2 ¶ 47; Dkt. No. 135-8; Dkt. No. 135-9 ¶ 61; Dkt. No. 143-1 at 48:3-24, 42:23-43:5, 47:8-14).

Plaintiff also argues that the Korean priority application explains that in the embodiment shown in Figures 1 and 2, it is the data communication terminal itself that “registers the location.” *Id.* at 6 (Dkt. No. 139-7 at 70). Regarding Defendants’ claim differentiation argument, Plaintiff contends that if Claim 4 requires that the location register cannot access stored information at the terminal, then Claim 1 is broader and encompasses embodiments in which the location register can access data on the terminal. *Id.* Plaintiff also argues that Defendants’ negative limitation is not an issue of claim construction, but instead is an issue of fact finding. *Id.* at 6-7. Plaintiff further submits that the cases Defendants cite are not on point because the location register is a software

function, not a physical location. *Id.* at 7-9. Finally, Plaintiff argues that Defendants misreport the content of the expert report on infringement submitted by Dr. Kelley in the AT&T Case. *Id.* at 9 (citing Dkt. No. 143-2 ¶ 447).

## 2. Analysis

The phrase “location register that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network” appears in Claim 1 of the ‘728 Patent. The parties in the AT&T Case disputed the term “location register,” and the Court provided the construction that the parties agreed upon in this case. The parties in this case dispute whether the claimed “location register” must be external to the data communication terminal, as Defendants contend. The Court finds that the intrinsic evidence indicates that the “location register” is *at least* included in the outdoor wireless internet network.

The claim construction inquiry “must begin, and remain centered, on the language of the claims themselves.” *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003). The claims of the ‘728 Patent indicate that the location register is at least included in the outdoor wireless internet network. First, the preamble of Claim 1 recites “providing internet communication service to a data communication terminal . . . using an outdoor wireless internet network including an antenna, a router and a location register.” ‘728 Patent at 15:9–16. It is not reasonably disputed that the outdoor wireless internet network is a separate component from the data communication terminal. Thus, Claim 1 requires that the location register is at least included in the outdoor wireless internet network, which is separate from the data communication terminal.

The body of Claim 1 confirms this by listing the “data communication terminal” as a separate element from the “location register.” See *Becton, Dickinson & Co. v. Tyco Healthcare Grp., LP*, 616 F.3d 1249, 1254 (Fed. Cir. 2010) (“Where a claim lists elements separately, the

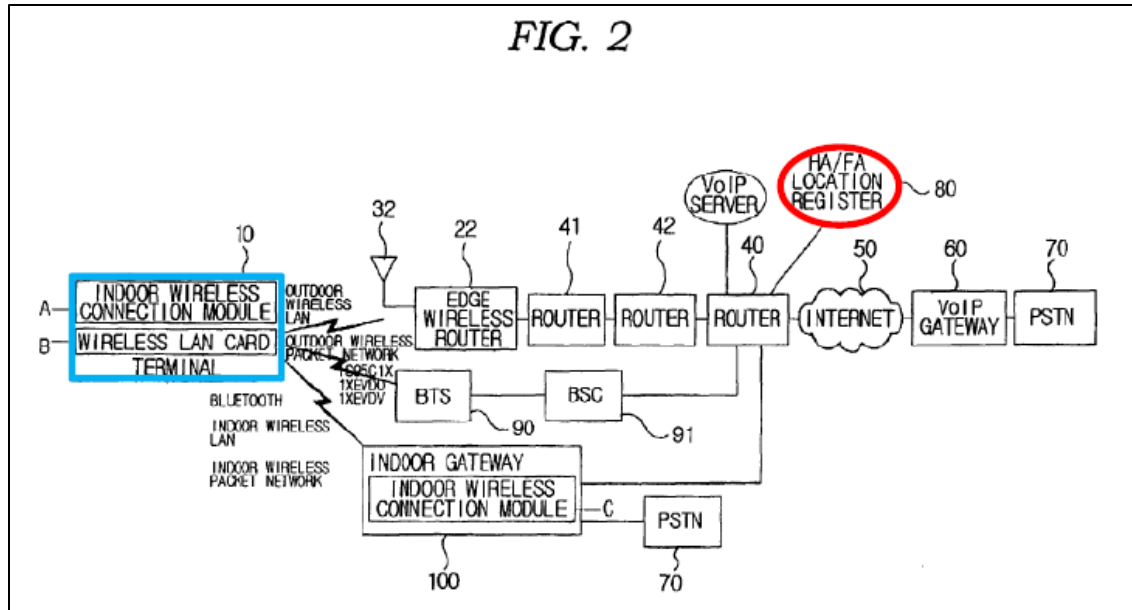
clear implication of the claim language is that those elements are distinct components of the patented invention.”) (internal quotations omitted). Claim 1 further requires that the location register “stores location information *of the data communication terminal received* through the indoor network or outdoor wireless internet network,” and that a router “determines the location *of the data communication terminal stored in the location register.*” Therefore, Claim 1 requires one element of the outdoor wireless internet network (*i.e.*, a location register) to receive and store information about another element of the system (*i.e.*, a data communication terminal). *See NTP, Inc. v. Rsch. In Motion Ltd.*, 418 F.3d 1282, 1300 (Fed. Cir. 2005) (holding that the “gateway switch” is a separate component from the “originating processor” because the claims require that information “*is transmitted from an ‘originating processor’ to a gateway switch*”) (emphasis in original).

Dependent Claim 4 further indicates that the “location register” is at least included in the outdoor wireless internet network, which is a separate element from the data communication terminal. *See Laitram Corp. v. NEC Corp.*, 62 F.3d 1388, 1392 (Fed. Cir. 1995) (holding that “dependent claims can aid in interpreting the scope of claims from which they depend”). Specifically, Claim 4 requires “the data communication terminal informs the location register that the terminal is located indoors by registering its location into the location register.” It would be nonsensical to require the data communication terminal to inform itself that it is indoors by registering its location into itself. *Becton, Dickinson & Co.*, 616 F.3d at 1255 (“A claim construction that renders asserted claims facially nonsensical cannot be correct.”) (internal quotation marks omitted).

Turning to the specification, it consistently indicates that the “location register” is at least included in the outdoor wireless internet network, which is a separate element from the data

communication terminal. For example, the specification states that “the system of the present invention comprises of an outdoor wireless LAN network ... the wireless packet network ... an indoor network ... and an external network including the location register 80, the internet 50 including a plurality of internet servers, a VoIP gateway 60 and a PSTN.” ‘728 Patent at 8:35–43. Similarly, the Summary of the Invention states that “[t]he present invention includes a location register for storing location information transmitted from the wireless internet terminal in order to confirm as to whether the user of the wireless internet terminal is located indoors or outdoors.” *Id.* at 3:9–13. Thus, the location register is at least included in the outdoor wireless internet network, because the location register receives information “transmitted from the wireless internet terminal” (*i.e.*, the data communication terminal). The data communication terminal would not “transmit” information to the location register if the location register was entirely included within the data communication terminal.

The remainder of the specification shows that the location register is at least included in the outdoor wireless internet network. Every figure in the specification illustrates the location register as part of the outdoor wireless internet network, which is different than the data communication terminal. For example, Figure 2 illustrates the location register (80) (red) as an element of the outdoor wireless internet network that is different from the data communication terminal (10) (blue):



*Id.* at Fig. 2 (annotated). The specification describes the “location register” as part of an “external network,” with the external network also including the internet, internet servers, a VoIP gateway, and a PSTN. *Id.* at 8:31–42. Indeed, as shown above in Figure 2, the external network containing the location register (80) connects to a router (40), which is part of “an outdoor wireless LAN network” that is distinct from and connects to the indoor network through an indoor gateway (100). *Id.* Neither Figure 2 nor the accompanying text suggests any construction of the location register that is not included as a part of the outdoor wireless internet network.

Furthermore, every embodiment describes a procedure by which the data communication terminal registers its location into the location register. This would be unnecessary if the data communication terminal was entirely part of the location register, and was not required to be part of the outdoor wireless internet network. For example, in the embodiment shown in Figure 3, “PDA 10 registers the location thereof into the location register 80 based on the mobile IP message through the path constructed by the antenna 32, the access point 22, and the routers 41, 42, 40 after going through authentication by the location register 80.” *Id.* at 9:47–53. In other words, the data communication terminal (PDA 10) sends a registration message that passes through an access



point and multiple routers before being received by the location register. The location register in this embodiment is at least included in the outdoor wireless internet network, as it is in all other embodiments, including the embodiments shown in Figures 4 through 6. *See id.* at 11:30–33, 12:66–13:3, 14:8–12.

The parties agree that the term “location register” should be construed to mean “register that records the location of the data communication terminal.” The specification states that “in order to connect with the outdoor wireless LAN network or to utilize a roaming service through the outdoor wireless LAN network, a current location of a mobile host (*i.e.*, the data communication terminal) should be stored in the location register.” *Id.* at 7:66–8:3; *see also id.* at 9:12–15, 3:9–13, 14:28–31. This is important because if the user moves outdoors and “the PDA 10 cannot receive the indoor system ID information broadcasted from the indoor gateway 100,” the PDA can “go through the authentication of the current location by the location register 80 to register its current location into the location register through the outdoor wireless internet network (step S67, S68, S69).” *Id.* at 14:26–32. Accordingly, a person of ordinary skill in the art would understand that the “location register” is at least included in the outdoor wireless internet network.

Plaintiff’s arguments do not rebut the intrinsic evidence. Plaintiff first argues that Defendants’ construction “preclud[es] the mobile phone from storing and making available to the network information about its location in order to allow switching decisions to be made.” Dkt. No. 135 at 13. Contrary to Plaintiff’s argument, the Court’s construction does not preclude the data communication terminal from storing location information and sending that information to the network, including the location register. *See e.g.*, 728 Patent at 3:9–11 (“The present invention includes a location register for storing location information transmitted from the wireless internet terminal . . .”).

Plaintiff next argues that the claims do not “require a location register to be a single physical structure,” but rather that a location register can be “distributed” across multiple network elements. Dkt. No. 135 at 13-18. Defendants argue that there is nothing in the specification that suggests a distributed location register. Dkt. No. 139 at 24. The specification does not explicitly suggest a distributed location register. However, the intrinsic evidence does not preclude it either so long as the “location register” is at least included in the outdoor wireless internet network. Therefore, using a “centralized database” for a location register may be one implementation, but a person of ordinary skill in the art would understand that it is not the only way to implement a location register. *See* Dkt. No. 135-9 ¶ 64.

Indeed, the phrase “centralized database” does not appear in the specification. Furthermore, Defendants’ expert, Mr. Rysavy, conceded that the specification did not disclose the physical implementation of the location register. Dkt. No. 135-6 at 55:6-13. Moreover, Figures 1-2 illustrate that includes an “HA/FA Location Register.”<sup>3</sup> The specification states that “[t]he location register 80 is the home agent HA or the foreign agent FA which operates in accordance with the mobile IP protocol and records a current location of a data communication subscriber.” ‘728 Patent at 9:12-15.

Defendants’ expert, Mr. Rysavy, references the IETF RFC 2002 “Mobile IP” specification regarding the home agent / foreign agent embodiment discussed in the ‘728 Patent. The Court does not find where the RFC 2002 document places any limits on where the home agent and foreign agent are physically located. Dkt. No. 135-9 ¶ 61; Dkt. No. 135-8 at 10 (“Other placements of the home agent relative to the mobile node’s home location MAY also be possible using other mechanisms for intercepting datagrams destined to the mobile node’s home address. Such

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<sup>3</sup> The parties agree that HA/FA refer to “home agent” / “foreign agent.”

placements are beyond the scope of this document....Other placements of the foreign agent relative to the mobile node MAY also be possible using other mechanisms to exchange datagrams between these nodes, but such placements are beyond the scope of this document.”).

At his deposition, Mr. Rysavy admitted that the RFC 2002 does not discuss the physical implementation of the home agent / foreign agent. *See e.g.*, Dkt. No. 135-6 at 48:3-24 (“In scanning through the [RFC 2002] specification I didn’t see a discussion of physical implementation of the function.”). Indeed, Defendants stated at the claim construction hearing that they were not arguing that the home agent HA and the foreign agent FA have to be one physical structure. Accordingly, the intrinsic evidence does not preclude a distributed location register, and actually implies one by providing the home agent HA and the foreign agent FA embodiment.

Plaintiff also argues that “a mobile terminal must determine its location in relation to other network elements.” Dkt. No. 135 at 19-20. To be clear, the Court’s construction does not preclude the data communication terminal from storing location information prior to transmitting it to the location register. The act of storing and then transmitting location information to a location register does not turn the data communication terminal itself into the claimed “location register” included at least in the outdoor wireless internet network.

Plaintiff further argues that a mobile terminal is a node on a network pursuant to the “mobile IP” standard referenced in the specification, and therefore could be on the outdoor network. Dkt. No. 143 at 3. To the extent that Plaintiff contends that the claimed “location register” may be *entirely* in the recited “the data communication terminal,” the Court rejects that argument. As discussed above, the recited “data communication terminal” is a separately claimed element from the “outdoor wireless internet network.”

Defendants contend that the Korean priority application confirms the separateness of the

location register and data communication terminal. The Korean priority application does not disclose anything that is inconsistent with the Court’s construction. Similarly, Defendants argue that Plaintiff has repeatedly admitted that the claimed “location register” is external to the data communication terminal. Dkt. No. 139 at 22. Again, the Court concludes that Plaintiff’s prior statements are consistent with the Court’s construction, which requires that the “location register” is at least included in the outdoor wireless internet network. Indeed, during the AT&T Case, Plaintiff’s expert acknowledged that “[t]he location register that is being referred to here [in the 728 patent] is on the network side.” Dkt. No. 139-6 at 16 n.11 (quoting Dr. Kelley’s Opening Infringement Report in the AT&T litigation). Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

### 3. Court’s Construction

For the reasons set forth above, the Court construes the phrase **“location register that stores location information of the data communication terminal”** to mean **“location register of the outdoor wireless internet network that stores location information of the data communication terminal.”**

#### C. “selecting one of the indoor and the outdoor networks in accordance with the determined location of the data communication terminal”

| <u>Disputed Term</u>   | <u>Plaintiff’s Proposal</u>        | <u>Defendants’ Proposal</u>   |
|--|------------------------------------|---|
| “selecting one of the indoor and the outdoor networks in accordance with the determined location of the data communication terminal” | No additional construction needed. | “selecting one of the indoor and outdoor networks based on the determined location of the data communication terminal, which is stored in the location register.” |

## 1. The Parties' Positions

The parties dispute whether the router's "selecting" decision must be based on the location of the mobile device that is stored in the location register, as Defendants propose. Plaintiff notes that the Court previously construed the term "location register" to mean "register that records the location of the data communication terminal," and the term "location information" to mean "information on a locational area or indoor system ID information or both." Dkt. No. 56 at 6. (citing AT&T Case, Dkt. No. 104 at 36, 42). Plaintiff argues that neither of the Court's constructions place any limit on the physical location of the location register. *Id.*

Plaintiff also argues that when the specification wants to describe one structure as having to be located within another structure it expressly states this. *Id.* at 7 (citing '728 Patent at Claim 1). Plaintiff contends that in Figures 1 and 2, the location register is not a single physical structure present in any one required location. *Id.* (citing Dkt. No. 56-3 at 82:14-21). Plaintiff further argues that there is no limitation regarding the placement of the location register in Figures 1A and 1B. *Id.* (citing '728 Patent at 4:28-43).

Plaintiff also contends that Figure 2 is described as "an embodiment of the present invention," and the discussion of Figure 2 makes clear that there is an "indoor network" and "an external network" (*i.e.*, an outdoor network). *Id.* at 7-8 (citing '728 Patent at 4:35-38, 8:39-43). According to Plaintiff, the location register in Figure 2 is "the home agent HA or the foreign agent FA which operates in accordance with the mobile IP protocol." *Id.* at 8 (citing '728 Patent at 9:12-15). Plaintiff argues that there is no limitation on the location of the home agent or foreign agent, and that it can be on any node of the network. *Id.* (citing Dkt. No. 56-4; Dkt. No. 135-9 ¶ 61; Dkt. No. 56-3 at 49:15-23; 48:3-24). Plaintiff contends that it is accepted that the HA/FA can run on any general purpose computer and can be distributed across more than one network element. *Id.* (citing Dkt. No. 56-5 ¶ 44; Dkt. No. 56-12). According to Plaintiff, the '728 Patent is not about

the physical implementation layer. *Id.*

Plaintiff further contends that the concept of distributed storage of data across multiple physical locations was well known. *Id.* at 10 (citing Dkt. No. 56-5 ¶¶ 40-41; Dkt. No. 56-8; Dkt. No. 56-9). Plaintiff submits that most network functions were known to be distributable across multiple network elements or nodes at the time of the ‘728 Patent. *Id.* (Dkt. No. 56-5 ¶ 43; Dkt. No. 56-11). Plaintiff further argues that the claims require a “data communication terminal” that can perform “wireless” communication over two distinct networks, which is a physical structure. *Id.* (citing ‘728 Patent at 1:24–34). Plaintiff submits that the specification and claims do not place any limits on the physical implementation of the location register. *Id.* at 11 (citing Dkt. No. 56-3 at 35:20-36:3, 55:6-13).

Defendants respond that the dispute centers on whether the router, when performing the “selecting” of the specific network (indoor or outdoor), uses the location (of the data communication terminal) stored in the location register. Dkt. No. 57 at 6. Defendants argue that the router’s “selecting” decision must be based on the location of the mobile device that is stored in the location register. *Id.* Defendants contend that the intrinsic record consistently describes that the router selects a network (*i.e.*, indoor or outdoor) based on information derived from the “location register,” and that the location register “controls” the network path (of the router). *Id.* at 7 (citing ‘728 Patent at Claim 1).

Defendants further argue that the specification is also unequivocal that the “router” receives “location information” from the “location register” to provide selection of one of the indoor network and outdoor wireless internet network. *Id.* at 8 (citing ‘728 Patent at 10:44–52). Defendants contend that the linkage between the determination of the location “stored in the location register” with the router’s switching decision is further supported by the remainder of the

specification. *Id.* (citing ‘728 Patent at 2:34–38, 2:49–51, 3:9–15, 9:54–67). Defendants also argue that the specification describes making its “selecting” decision only by using the information stored in the location register. *Id.* at 9 (citing ‘728 Patent at 7:48–50, 7:6–8, 10:9–13). According to Defendants, the specification does not describe any situation in which the router has a capability of changing its switching decision between indoor and outdoor networks other than from the location information of the data communication terminal stored in the location register. *Id.*

Defendants also contend that the Korean priority application used the language “according to.” *Id.* at 10 (citing Dkt. No. 57-2). Defendants submit that the Korean priority application further provides that: “In the present invention, the network path for the roaming service is different depending on the location information stored in the location register.” *Id.* (citing Dkt. No. 57-2 ¶¶ 19-20, 24, 30, 65, 95). Defendants further argue that in its response to T-Mobile’s Alice-based motion, Plaintiff repeatedly argued exactly what Defendants are presently arguing. *Id.* Defendants contend that Plaintiff argued that the switching decision is based on the actual location information in the location register. *Id.* at 11 (citing Dkt. No. 57-3 at 2, 5-6).

Defendants further argue that their construction aligns with this Court’s construction for the term “provides roaming of voice/data signals provided to the user.” *Id.* (citing Dkt. No. 57-4 at 8-11). Defendants submit that the “depending on” quoted by the Court confirms that the switching decision is made using the specific location of the data communication terminal stored in the location register. *Id.* at 12. Defendants also argue that Plaintiff’s expert in the AT&T Case, Dr. Kelley, agreed that the router selects a network based on the determined location from the location register. *Id.* (citing Dkt. No. 57-5 ¶¶ 58, 194, 198-199). According to Defendants, Plaintiff’s expert stated that the router makes the switching decision “depending on” (*i.e.*, based on) the location stored in the location register. *Id.* at 13.

Defendants also contend that whether a location register can be “distributed” or whether it has a particular physical location is irrelevant to the instant claim construction issue. *Id.* Defendants argue that for the present dispute the router must base its network switching decision on the location information from the location register. *Id.* Defendants also argue that Plaintiff does not explain how a “distributed” location register can “control” the path because there would not be any single value that identifies which path should be chosen. *Id.*

Defendants further argue that Plaintiff’s proposed “no additional construction needed” is a red herring because it permits Plaintiff to advance ambiguous infringement theories. *Id.* at 13-14. Defendants argue that Plaintiff’s non-construction of this limitation provides that the router selects a network path to the data communication terminal that is consistent with the stored location information, even if not based upon that stored location information. *Id.* at 14. Defendants contend that Plaintiff’s “distributed” location register argument untethers the claims from the alleged invention. *Id.*

Plaintiff replies that Defendants’ brief offers a new construction that was absent from all previous claim construction disclosures. Dkt. No. 60 at 2. Plaintiff argues that Claim 1 does not state that the location register stores a “determined location” of the data communication terminal. *Id.* at 3. Plaintiff further argues that Claim 1 covers an implementation where location information is stored in the location register but then exported to a router which “determines the location of the data communication terminal” based on the location information *Id.* Plaintiff contends that the inventor knew how to describe additional requirements for the location register when intended. *Id.* (citing ‘728 Patent at Claim 12).

Plaintiff also argues that the specification makes clear that the determination of location can be made by structures other than the location register. *Id.* (citing ‘728 Patent at 11:39–47,



12:61–64). Plaintiff contends that the specification nowhere states that the location register must store a “determined location,” and that none of Defendants’ cites show the requirement of a specific place for storing a “determined location.” *Id.* at 4 (citing ‘728 Patent at 2:34–38, 2:49–51). Plaintiff also argues that the specification makes clear that switching decisions “in accordance with the determined location” encompasses more than making a decision based solely on the presence or absence of an indoor or outdoor network. *Id.* According to Plaintiff, the phrase “in accordance with the determined location” encompasses instances in which a determination is made that the terminal is in the range of an indoor network that is in abnormal operation, and therefore the decision is made to switch to an available outdoor network. *Id.* (citing AT&T Case, Dkt. No. 104 at 9-10).

Plaintiff further contends that nothing in the sections of the Korean Application cited by Defendants prevents the router from taking the raw location information stored in the location register and using it to determine a location of the terminal. *Id.* at 5. According to Plaintiff, the Korean Application discloses that the “location checker (internet switchboard) for determining” accesses data that is “stored in the location register.” *Id.* (citing Dkt. No. 57-2 ¶30). Plaintiff also argues that the Korean Application also describes embodiments in which the PDA determines location. *Id.* (citing Dkt. No. 57-2 ¶¶ 89, 107). Plaintiff further contends that the Korean Application also makes clear that switching in accordance with the location of the device can involve information other than simply whether the device is in the range of the network. *Id.* (citing Dkt. No. 57-2 ¶¶ 97, 99, 116-117, 146).

Finally, Plaintiff contends that its arguments in its §101 briefing, and Dr. Kelley’s declaration, do not support Defendants’ position. *Id.* at 6. Plaintiff argues that neither of the cited statements exclude the embodiment in which the router receives “location information” from the

location register, calculates a “determined location” based on said “location information,” and then stores that “determined location” local. *Id.* Plaintiff contends that in this embodiment the “determined location” does not have to be stored in the location register. *Id.*

## 2. Analysis

The phrase “selecting one of the indoor and the outdoor networks in accordance with the determined location of the data communication terminal” appears in Claim 1 of the ‘728 Patent.

The context for the disputed phrase in Claim 1 is as follows:

a location register that stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network;  
and

...

a router that determines the location of the data communication terminal stored in the location register and provides roaming of voice/data signals provided to the user by *selecting one of the indoor and the outdoor networks in accordance with the determined location of the data communication terminal.*

‘728 Patent at Claim 1 (emphasis added). As discussed with the previous disputed phrase, the location information is stored in the location register that is at least included in the outdoor wireless internet network. The specification indicates that the “router” receives “location information” from the “location register” to provide selection of either the indoor network or the outdoor wireless internet network:

The location register 80 *controls a path* of the incoming messages or voice data transmitted to the internet 50. *If it is determined that the user’s location stored in the location register 80* has been changed from the outdoors to the indoors, the router connected with the location register transfers the voice data or incoming messages of the recipient to the indoor gateway 100 . . .

*Id.* at 10:44–52 (emphasis added); *see also id.* at 3:39–47, 7:47–50. The router can only “determine that the user’s location stored in the location register” has changed if the router accesses and uses that stored location. Similarly, the location register can only “control” the path if the router switching is based on the location of the user stored in the location register.

Defendants argue that without their construction this phrase could be improperly interpreted by a lay juror to mean the router’s “selecting” does not need to use the actually determined location stored in the location register. Dkt. No. 57 at 7. Defendants contend that when the disputed claim language is read in context, it is clear that a router “determines the location of the data communication terminal stored in the location register,” and that the “router” selects “one of the indoor and outdoor networks” based on the “determined location” from the “location register.” *Id.*

The Court general agrees with Defendants with one exception. Plaintiff persuasively argues that the specification does not state that the location register must store a “determined location.” Dkt. No. 60 at 4. Therefore, the Court’s construction replaces the term “determined location” in Defendants’ construction with the term “location,” which is further specified as being stored in the location register. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

### 3. Court’s Construction

For the reasons set forth above, the Court construes the term **“selecting one of the indoor and the outdoor networks in accordance with the determined location of the data communication terminal”** to mean **“selecting one of the indoor and outdoor networks based on the location of the data communication terminal stored in the location register.”**

#### D. “registered indoor system ID information”

| <u>Disputed Term</u>                      | <u>Plaintiff’s Proposal</u>  | <u>Defendants’ Proposal</u>  |
|---|--|--|
| “registered indoor system ID information” | “indoor system ID information for which the data communication terminal has been granted access” | No additional construction needed beyond construction of “indoor system ID information.” |

### 1. The Parties' Positions

The parties dispute whether the term “registered” requires construction. Plaintiff argues that Defendants present no evidence that the Court’s prior construction of “registered indoor system ID information” is technically incorrect or inaccurate. Dkt. No. 135 at 21 (citing Dkt. No. 135-7 ¶¶ 55, 57-58). According to Plaintiff, the suggestion that a lay jury will understand the meaning of the term registered is not credible. *Id.* (citing Dkt. No. 135-6 at 71:8-72:16, 70:14-81:3).

Plaintiff also argues that including the language “for which the data communication terminal has been granted access” in the construction provides clarity and accurately reflects the understanding of a person of ordinary skill in the art. *Id.* at 22 (citing Dkt. No. 135-9 ¶¶ 72-77). Plaintiff contends that its construction states what it means for the indoor system ID information to be registered in the context of the ‘728 Patent. *Id.* (citing Dkt. No. 135-9 ¶ 75; ‘728 Patent at 3:23–47). Plaintiff submits that it is the registration data that allows the location register to determine a change in the user’s location. *Id.* at 23 (citing Dkt. No. 135-9 ¶ 76).

Plaintiff further argues that if the indoor system ID information has been “registered,” that indoor system ID information can be used to allow the data communication terminal to connect with the indoor network that is uniquely identified by that indoor system ID information. *Id.* According to Plaintiff, the specification provides that by using “registered” or “registration” information, the data communication terminal can be permitted to access to a particular network. *Id.* Plaintiff argues that the construction previously adopted by the Court makes clear that “registration data” means data reflecting the fact that the data communication terminal has been granted access to the indoor network. *Id.*

Defendants respond that the only dispute here is whether a jury needs to be told the meaning of “registered.” Dkt. No. 139 at 26. Defendants argue that Plaintiff’s construction is unnecessary

and contrary to the plain meaning. *Id.* Defendants further argue that the ‘728 Patent uses the term “registered” in its ordinary sense. *Id.* (citing ‘728 Patent at 12:59–65, 8:20–23, 10:9–13; Dkt. No. 139-2 ¶ 57). Defendants also contend that Mr. Rysavy testified that he could not provide a dictionary definition of the term “registered” on the spot, but that the meaning would be readily understood by a jury from the jurors’ personal experience. *Id.* (citing Dkt. No. 139-2 ¶ 57). Defendants submit that a juror will be able to apply the plain and ordinary meaning of “registered” in the context of the ‘728 Patent to determine if the “indoor system ID information” has been registered. *Id.*

Defendants also argue that Plaintiff’s construction is contrary to the plain meaning, and equates “registered” with “has been granted access.” *Id.* at 27. Defendants contend that being “registered” requires more. *Id.* Defendants argue that Plaintiff’s extrinsic evidence defines “register” as “[t]o provide your name and contact information to an organization . . . ,” and “registered user” as “[s]omeone who visits a Web site and purposefully supplies personal information, such as name, address, and phone number.” *Id.* (citing Dkt. No. 139-8). According to Defendants, the phrase “registered indoor system ID information” needs no construction beyond the construction of “indoor system ID information.” *Id.*

Plaintiff did not submit arguments regarding this term in its Reply brief.

## **2. Analysis**

The term “registered indoor system ID information” relates to claims 1-7 and 9-11 of the ‘728 Patent. The Court finds that the term is used consistently in the claims and is intended to have the same general meaning in each claim. The parties in the AT&T Case agreed that the phrase “registered indoor system ID information” means “indoor system ID information for which the data communication terminal has been granted access.” AT&T Case, Dkt. No. 104 at 7. The parties

in this case agree that the term “indoor system ID information” means “information uniquely identifying the indoor network.” Dkt. No. 145-1 at 15.

Defendants contend that the term “registered” is a concept that jurors encounter on a daily basis. Dkt. No. 139 at 26. Defendants argue that Plaintiff’s construction replaces one word (“registered”) with ten words. *Id.* According to Defendants, the ‘728 Patent uses the term “registered” in its ordinary sense. *Id.* Defendants further contend that a juror will be able to apply the plain and ordinary meaning of “registered” in the context of the ‘728 Patent to determine if the “indoor system ID information” has been registered. *Id.* Defendants submit that “registered” requires more than being granted access. *Id.* at 27.

The Court finds that the plain and ordinary meaning of the term “registered” will not resolve the parties’ dispute. Instead, including the language “for which the data communication terminal has been granted access” provides clarity and accurately reflects the understanding of a person of ordinary skill in the art. Dkt. No. 135-9 ¶¶ 72-77. The construction states what it means for the indoor system ID information to be registered in the context of the ‘728 Patent. *Id.* The specification describes “registered indoor system ID information” as follows:

Accordingly, according to an aspect of the present invention for achieving the above objects, there is an optimal internet network connecting and roaming system providing internet communication service to a data communication terminal of a user moving indoors or outdoors, being characterized in that, *the data communication terminal includes an indoor wireless connection module and stores registered indoor system ID information, so that the data communication terminal may be connected with the indoor network if the registered indoor system ID information is received and may be connected with the outdoor wireless internet network if the registered indoor system ID information is not received*; the indoor gateway includes an indoor wireless connection module therein, broadcasts the indoor system ID information, makes wireless communications with the data communication terminal through the indoor wireless connection module, and is connected with the internet network via a wire; the location register stores location information of the data communication terminal received through the indoor network or outdoor wireless internet network; and the router determines the location of the data communication terminal stored in the location register and

provides roaming of voice/data signals transferred to the user by selecting one of the indoor and the outdoor networks in accordance with the determined location of the data communication terminal.

'728 Patent at 3:23–47. As indicated, if the indoor system ID information is “registered,” that information can be used to allow the data communication terminal to connect with the indoor network that is uniquely identified by that indoor system ID information. In other words, the specification provides that by using “registered” or “registration” information, the data communication terminal can be permitted to access a particular network. The construction previously adopted by the Court indicates that “registration data” means the data communication terminal has been granted access to the indoor network. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties and given it its proper weight in light of the intrinsic evidence.

### 3. Court’s Construction

For the reasons set forth above, the Court construes the term **“registered indoor system ID information”** to mean **“indoor system ID information for which the data communication terminal has been granted access.”**

#### E. “location information ...”

| <u>Disputed Term</u>  | <u>Plaintiff’s Proposal</u>   | <u>Defendants’ Proposal</u>        |
|---|---|------------------------------------|
| “location information [of the data communication terminal received through the indoor network]” | “location information” should be construed as “information on a locational area or indoor system ID information or both.”<br>The remainder of this term requires no additional construction | “the indoor system ID information” |

|  |  |                   |
|--|--|-------------------|
| “location information [of the data communication terminal received through the ... outdoor wireless internet network]” | “location information” should be construed as “information on a locational area or indoor system ID information or both.” The remainder of this term requires no additional construction | “locational area” |
|--|--|-------------------|

### 1. The Parties’ Positions

The parties agree that the term “location information” means “information on a locational area or indoor system ID information or both.” Dkt. No. 145-1 at 15-16. This is the construction determined by the Court in the AT&T Case. *See* AT&T Case, Dkt. No. 104 at 36. Defendants argue that the intrinsic record requires specific (and different) types of “location information” for a connection to an indoor network, and for a connection to an outdoor wireless internet network.

Plaintiff argues that Defendants seek to break the construction of “location information” into two parts and improperly limit “location information” to “indoor system ID information” in one context, and “locational area” in another. Dkt. No. 135 at 24. Plaintiff contends that the constructions proposed by Defendants are essentially the same as the construction proposed for “location information” by Defendant in the AT&T Case. *Id.* (citing AT&T Case, Dkt. No. 104 at 34). Plaintiff further argues that the specification describes different types of “location information” *Id.* (citing ’728 Patent at 4:23–24). According to Plaintiff, a person of ordinary skill in the art would therefore understand that this embodiment may store both the locational area and indoor system ID information. *Id.* (citing Dkt. No. 135-9 ¶ 86). Plaintiff contends that this means that for any data communication terminal that is located “indoors,” the location information may include the locational area in addition to the indoor system ID information. *Id.*

Plaintiff also argues that Mr. Rysavy further opines that location information can only be locational area when the data communication terminal is located outdoors, and can only be indoor system ID information when the terminal is located indoors. *Id.* at 24-25 (citing Dkt. No. 135-7 ¶¶



33-37). According to Plaintiff, Defendants ignore the embodiment in which both the locational area and indoor system ID information are stored. *Id.* at 25 (citing Dkt. No. 135-9 ¶¶ 86-92). Plaintiff contends that Mr. Rysavy admitted that both locational area and indoor system ID information could both be stored at the same time. *Id.* (citing Dkt. No. 135-6 at 26:7-13).

Plaintiff further argues that there is no evidence in the specification suggesting that “locational area” and “indoor system ID information” must always be mutually exclusive. *Id.* (citing Dkt. No. 135-9 ¶ 91). According to Plaintiff, the specification’s discussion of “location information” shows that it can be locational area, indoor system ID information, or both. *Id.* Plaintiff submits that having different types of location information stored in different registers might allow for a faster authentication process, which would provide a faster switching mechanism. *Id.* at 26.

Defendants respond that their construction requires specific (and different) types of “location information” for a connection to an indoor network, on the one hand, and for a connection to an outdoor wireless internet network, on the other. Dkt. No. 139 at 28. Defendants argue that when a device is connected via the indoor network the location information is the “indoor system ID information,” and when a device is connected via the outdoor wireless internet network the location information is a “locational area.” *Id.* (citing Dkt. No. 139-3 at 118:2-5, 118:18-22, 120:7-15). Defendants contend that the location register stores “location information of the data communication terminal,” which is used by the router to select between the indoor and outdoor networks. *Id.* (citing ‘728 Patent at 15:31-33, 3:9-13, 7:41-43).

Defendants further argue that the specification states what “location information” is stored in the location register in each of these two situations. *Id.* at 29 (citing ‘728 Patent at 3:48-51, 9:16-20). Defendants contend that under Plaintiff’s construction, the claims would be met if a

location register stores only the indoor system ID information when a device attempts to connect to the outdoor wireless internet network, or only a locational area when a device attempts to connect to the indoor network. *Id.* Defendants argue that this would not work. *Id.* (citing Dkt. No. 139-2 ¶ 36; ‘728 Patent at 3:9–15; Dkt. No. 139-3 at 120:12–15, 121:5–13).

Defendants also argue that the system would be inoperable if the location register stored only a locational area when a device is connected to an indoor network. *Id.* at 29-30 (citing ‘728 Patent at 8:47–55, 11:64–12:1; Dkt. No. 139-2 ¶ 36). According to Defendants, the system would not be able to transmit data to an indoor network in accordance with the “location information” in the location register unless that location information includes at least the indoor system ID information. *Id.* at 30 (citing Dkt. No. 139-2 ¶ 36; Dkt. No. 139-3 at 118:18–22, 120:7–11, 121:14–19, 125:3–13). Defendants argue that their constructions do not preclude storing both types of location information. *Id.* Defendants submit that their constructions require that at least a locational area is stored when the data communication terminal is connected to the outdoor wireless internet network, and at least the indoor system ID information is stored when the terminal is connected to the indoor network. *Id.*

Defendants further argue that the Court in the AT&T case did not specifically address whether the full limitation at issue here provides any further definition regarding when the different types of location information would be utilized. *Id.* (citing Dkt. No. 139-4 at 36). Defendants contend that their construction makes explicit that when a data communication terminal is connected via an indoor network, the location information for that device must include at least the indoor system ID information, and when a data communication terminal is connected via an outdoor wireless internet network, the location information for that device must include at least locational area. *Id.* at 31 (citing Docket No. 139-3 at 122:21–123:7).

Plaintiff replies that nothing prevents the system from using locational area information in the indoor network as an alternative embodiment. Dkt. No. 143 at 10. Plaintiff argues that the specification makes clear that the system can employ “location information” or “the location” without limiting location information to any particular mechanism. *Id.* (citing ‘728 Patent at 3:9–16, 8:2–6, 8:9–10, 8:20–23). Plaintiff also argues that the Korean application makes clear that the use of an indoor system ID as the form of the “indoor location” is only a preferred embodiment. *Id.* (citing Dkt. No. 139-7 ¶¶ 41, 20, 24).

Plaintiff alleges that Defendants are attempting to read the embodiment disclosed in Figure 2 into the claims. *Id.* at 11. Plaintiff argues that this is not the only embodiment and is not limiting. *Id.* (citing ‘728 Patent at 9:16–20, 3 :9–16, 3:48–51). Plaintiff also argues that in the example of Figure 2, the indoor system ID is the location information used with the indoor network. *Id.* (citing Dkt. No. 139-3 at 119:14-20). Finally, Plaintiff submits that Defendants’ argument that additional construction is necessary because the jury might think the indoor system ID information can be used to represent the location of a device when communicating with the outdoor network turns claim construction into fact finding. *Id.*

## 2. Analysis

The phrase “location information of the data communication terminal received through the indoor network or outdoor wireless internet network” relates to Claims 1-7 and 9-11 of the ‘728 Patent. The claims are directed to an internet network connecting and roaming. To accomplish this objective, “location information” is used, which includes information on a locational area or indoor system ID information. Specifically, the specification states the following:

In order to determine whether the wireless internet terminal is located indoors or outdoors, the wireless internet terminal determines whether ID information of an indoor system broadcasted from the indoor gateway is received, and in particular, whether the received ID information of the indoor system is equal to the stored ID

information.

‘728 Patent 3:16–22. The specification provides embodiments that a person of ordinary skill in the art would understand are exemplary and non-limiting. For example, the description of Figure 2 states the following:

The location information stored in the location register 80 is information on a locational area when the data communication terminal is located outdoors. On the other hand, when the terminal is located indoors, it is indoor system ID information.

*Id.* at 9:16–20. Claim 1 further recites that the location register “stores the location information of the data communication terminal received through the indoor network or outdoor wireless internet network.” Thus, the limitation in question is in the context of what location information is stored in the location register.

The specification discloses that “[w]hen the data communication terminal is located outdoors, the location information is information on a locational area; and when it is located indoors, the location information is indoor system ID information.” *Id.* at 3:48–51. Thus, the intrinsic evidence indicates that “location information” includes “information on a locational area or indoor system ID information or both.” The Court finds that no further limitation on what is stored is required.

Defendants argue that the intrinsic records “requires specific (and different) types of ‘location information’ for a connection to an indoor network, on the one hand, and for a connection to an outdoor wireless internet network, on the other.” Dkt. No. 139 at 28. Defendants’ argument ignores the claim language and reads an unwarranted limitation into this element of the claim. The type of location information required for a connection is recited in other elements of Claim 1. Specifically, claim 1 recites “a data communication terminal that includes an indoor wireless connection module and stores registered indoor system ID information, so that the data communication terminal may be connected with the indoor network if the registered indoor system

ID information is received and by connecting with the outdoor wireless internet network if the registered indoor system ID information is not received.”

Defendants argue “the claims would be met if a location register stores only the indoor system ID information when a device attempts to connect to the outdoor wireless internet network, or only a locational area when a device attempts to connect to the indoor network.” This argument ignores the claim language, which recites that “the data communication terminal may be connected with the indoor network if the registered indoor system ID information is received,” and connected with the outdoor wireless internet network “if the registered indoor system ID information is not received.” In other words, a person of ordinary skill in the art would understand that the data communication terminal can only connect to the indoor network if the indoor system ID information is received, and will connect to the outdoor wireless network if the indoor system ID information is not received.

Defendants also argue that their construction does not preclude storing both types of location information. Dkt. No. 139 at 30. This further indicates that this claim element does not require construction. The parties agree that “location information” means “information on a locational area or indoor system ID information or both.” As discussed, Claim 1 recites the location information required to establish a connection, thus, no further construction is required. Accordingly, the Court rejects Defendants’ construction because it reads an unwarranted limitation into the claims. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

### **3. Court’s Construction**

For the reasons set forth above, the phrase **“location information of the data communication terminal received through the indoor network or outdoor wireless internet**

**network”** is given its **plain and ordinary meaning**.

- F. “a fourth step of connecting with the internet network by switching connection of the data communication terminal from the outdoor wireless internet network to the indoor gateway and making wireless communications through the indoor gateway and an indoor wireless connection module”**

| <u>Disputed Term</u>   | <u>Plaintiff’s Proposal</u>          | <u>Defendants’ Proposal</u>  |
|--|--------------------------------------|--|
| “a fourth step of connecting with the internet network by switching connection of the data communication terminal from the outdoor wireless internet network to the indoor gateway and making wireless communications through the indoor gateway and an indoor wireless connection module” | No additional construction required. | The fourth step is required to occur after and not before the third step; otherwise, plain and ordinary meaning applies. |

### **1. The Parties’ Positions**

The parties dispute whether the fourth step of Claim 12 must occur after the previous steps of Claim 12. Plaintiff argues that Claim 12 recites a specific order for certain method steps when an order is intended. Dkt. No. 135 at 26. Plaintiff points to the example of the third step referring back to the second step in Claim 12. *Id.* Plaintiff argues that unlike the express reference to the second step in step three, there is no express ordering of the third and fourth steps. *Id.* Plaintiff further argues that Steps 3 and 4 contain a number of different events, and that there is nothing that prevents the events in Step 4 occurring after the authentication in Step 3 but before the storing in Step 3. *Id.* at 27.

Plaintiff submits that in the AT&T Case, the Court focused on the authentication event of Step 3 and did not address the issue of whether the other parts of Step 3, namely the storing event,

must occur before, after, or simultaneously with the various events listed in Step 4. *Id.* Plaintiff argues that the claim language puts no limitation on the order of events in Steps 3 and 4 that prevent the switching and making wireless communications events from occurring after authentication but before storage in Step 3. *Id.* According to Plaintiff, the issue of how these different elements work together is appropriately the subject of expert testimony at trial based on the specific system at issue. *Id.*

Defendants respond that their construction makes clear that the fourth step must occur after and not before the third step. Dkt. No. 139 at 32 (citing Dkt. No. 139-4 at 56–57). Defendants argue that Plaintiff’s expert testified that he agrees with the Court’s prior constructions. *Id.* (Dkt. No. 139-3 at 37:21–38:1). According to Defendants, the specification confirms that the claimed switching occurs after completion of authenticating and storing the location in the location register. *Id.* at 32-33 (citing ‘728 Patent at 10:9–21, 11:30–55, 13:7–19, 13:44–54, 14:8-32, Figs. 3–6).

Defendants also argue that Plaintiff admits that the “authentication event” of step three must occur before switching the connection in step four, but that the “storing event” in step three can still occur after switching. *Id.* at 33. Defendants contend that if the “storing” were allowed to occur out of order, then the “storing” of the location in the location register would be superfluous. *Id.* According to Defendants, the purpose of the location being stored in the location register is to allow the network to make a decision regarding switching based on the location. *Id.* (citing ‘728 Patent at 3:13–15). Defendants submit that authentication and storing must occur prior to switching, both as a matter of how the invention is described in the specification and as a matter of common sense. *Id.* at 34 (citing Dkt. No. 139-4 at 56–57).

Plaintiff did not submit arguments regarding this phrase in its Reply brief.

## **2. Analysis**

The phrase “a fourth step of connecting with the internet network by switching connection of the data communication terminal from the outdoor wireless internet network to the indoor gateway and making wireless communications through the indoor gateway and an indoor wireless connection module” relates to Claims 12-15 and 17–21 of the ‘728 Patent. The Court finds that all the “events” of the fourth step must occur after and not before the “events” of the third step. Specifically, the specification states the following:

According to the present invention for accomplishing the aforementioned objects, network paths (i.e. connection paths of a communication network) capable of connecting with the internet, a PSTN, or the like are switched depending on whether a user is located indoors or outdoors. That is, when the user is located indoors, a user’s wireless internet terminal is connected with an indoor-wired LAN through wireless communication module. Alternatively, when the user is located outdoors, the user’s wireless internet terminal is connected with an outdoor wireless internet network (a network which can be wirelessly connected with the internet) such as a wireless LAN network and a wireless packet network. Better communication quality with a lower cost is guaranteed to the user since the network connection can be switched in accordance with the location or movement of the user. At this time, a roaming service is provided through an optimal network path depending on whether the user is located indoors or outdoors.

‘728 Patent at 2:33–51. Similarly, in describing the flow chart illustrated in Figure 4, the specification states the following:

At this time, the PDA 10 goes through authentication by the location register 80 and registers its location into the location register 80 through the outdoor wireless LAN network.

Then, if the user moves indoors while making internet data communications or after finishing the internet data communications, the PDA 10 receives the indoor system ID information broadcasted from the indoor gateway 100 (step S22).

The PDA 10 compares the received indoor system ID information with the stored indoor network ID information to determine whether the PDA 10 has authority capable of using the indoor system. In addition, if it is determined that the received ID information is identical *to the stored ID information*, the location of the PDA 10 is registered into the location register 80 after going through the authentication by the location register through the outdoor or indoor wireless LAN network in accordance with the mobile IP message.

The location register 80 confirms from the registration data that the location of the



user has changed from the outdoors to the indoors.

If the PDA 10 has gone through the authentication of location registration, the PDA 10 switches its own mode from the outdoor data communication mode to the Bluetooth mode (step S24).

Then, the PDA 10 is connected with the indoor network in accordance with the indoor system ID information and makes wireless communications with the indoor gateway 100 through the Bluetooth modules A, C (step S25).

Accordingly, data information transmitted from the PDA 10 is transferred to the indoor gateway 100 through the Bluetooth module A, and then, the indoor gateway 100 transfers the information to the internet 50 (step S26).

*Id.* at 11:30–63. Thus, the intrinsic evidence indicates that before the data communication terminal can be connected with the internet network (*i.e.*, the fourth step) there must be an authentication of indoor location of the data communication terminal (*i.e.*, the third step). Plaintiff concedes this point. Dkt. No. 135 at 27. Plaintiff contends that there is nothing that prevents the events in Step 4 occurring after the authentication in Step 3, but before the storing in Step 3. *Id.*

Defendants respond that if the “storing” event in the third step were allowed to occur out of order, then the “storing” of the location in the location register would be superfluous. According to Defendants, the purpose of the location being stored in the location register is to allow the network to make a decision regarding switching based on the location. Dkt. No. 139 at 33 (citing ‘728 Patent at 3:13–15 (“The present invention can switch network paths to provide the roaming service in accordance with the location information stored in the location register.”)). On balance, the Court agrees with Defendants.

The claim language indicates that storing a location in the location register is an important event in the authentication process, and would be required before a decision is made on switching network paths. *See Mformation Techs., Inc. v. Rsch. In Motion Ltd.*, 764 F.3d 1392, 1399–1400 (Fed. Cir. 2014) (construing method claim to require an order where a step would “become superfluous” if no order were required). Indeed, the claim language itself explicitly numbers each

step, which indicates a required order. Accordingly, the Court rejects Plaintiff's argument. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

### 3. Court's Construction

For the reasons set forth above, the Court finds that the fourth step is required to occur after and not before the third step. Otherwise, plain and ordinary meaning applies.

**G. "a seventh step of switching the connection of the data communication terminal from the indoor gateway to the outdoor wireless internet network and performing the first step again"**

| <u>Disputed Term</u>   | <u>Plaintiff's Proposal</u>          | <u>Defendants' Proposal</u>   |
|--|--------------------------------------|---|
| "a seventh step of switching the connection of the data communication terminal from the indoor gateway to the outdoor wireless internet network and performing the first step again" | No additional construction required. | The seventh step is required to occur after and not before the sixth step; otherwise, plain and ordinary meaning applies. |

### 1. The Parties' Positions

The parties dispute whether the switching in Step 7 can occur after the authentication event in Step 6, but before the storing event in Step 6, as Plaintiff contends. Plaintiff argues that there is no express reference to events occurring in the sixth or any other step. Dkt. No. 135 at 28. According to Plaintiff, the claim language includes no requirement that the seventh step must occur only upon completion of the sixth step and not before. *Id.* Plaintiff contends that Defendants' proposal improperly imports an order when no such order is present in the claims themselves. *Id.* Plaintiff argues that Steps 6 and 7 internally define a number of events, and there is nothing that prevents the switching in Step 7 from occurring after the authentication event in Step 6, but before the storing event in Step 6. *Id.*

Defendants respond that their construction makes clear that the seventh step must occur after and not before the sixth step. Dkt. No. 139 at 32 (citing Dkt. No. 139-4 at 56–57). Defendants argue that Plaintiff’s expert testified that he agrees with the Court’s prior constructions. *Id.* (Dkt. No. 139-3 at 37:21–38:1). According to Defendants, the specification confirms that the claimed switching occurs after completion of authenticating and storing the location in the location register. *Id.* at 32-33 (citing ‘728 Patent at 10:9–21, 11:30–55, 13:7–19, 13:44–54, 14:8-32, Figs. 3–6).

Defendants also argue that Plaintiff admits that the “authentication event” of step six must occur before switching the connection in step seven, but that the “storing event” in step six can still occur after switching. *Id.* at 33. Defendants contend that if the “storing” were allowed to occur out of order, then the “storing” of the location in the location register would be superfluous. *Id.* According to Defendants, the purpose of the location being stored in the location register is to allow the network to make a decision regarding switching based on the location. *Id.* (citing ‘728 Patent at 3:13–15). Defendants submit that authentication and storing must occur prior to switching, both as a matter of how the invention is described in the specification and as a matter of common sense. *Id.* at 34 (citing Dkt. No. 139-4 at 56–57).

Plaintiff did not submit arguments regarding this phrase in its Reply brief.

## **2. Analysis**

The phrase “a seventh step of switching the connection of the data communication terminal from the indoor gateway to the outdoor wireless internet network and performing the first step again” relates to Claims 12-15 and 17–21 of the ‘728 Patent. The Court finds that all the “events” of the seventh step must occur after and not before the “events” of the sixth step. Specifically, the specification states the following in describing the flow chart illustrated in Figure 5:

Then, if the user moves outdoors, the PDA 10 cannot receive the indoor system ID information broadcasted from the indoor gateway 100 (step S38).

When the PDA 10 cannot receive the indoor system ID information, it is determined that the PDA 10 is located outdoors. Accordingly, the PDA 10 transmits the mobile IP registration message to the outdoor mobile communication network and goes through the authentication of a current location by the location register 80 to register its current location (step S39).

When the PDA 10 registers its location into the location register 80, the PDA 10 switches its own mode to the outdoor communication mode (step S40).

Then, the PDA 10 transmits the voice signals to the recipient through the outdoor wireless LAN network and receives the voice signals transmitted from the recipient through the outdoor wireless LAN network, so that the user and the recipient can continuously communicate with each other (step S41).

‘728 Patent at 13:42–60. Thus, the intrinsic evidence indicates that before the data communication terminal can be switched from the indoor gateway to the outdoor wireless internet network (*i.e.*, the seventh step) there must be an authentication of an outdoor location of the data communication terminal (*i.e.*, the sixth step). Plaintiff concedes this point. Dkt. No. 135 at 27. Plaintiff contends that there is nothing that prevents the switching in Step 7 from occurring after the authentication event in Step 6, but before the storing event in Step 6. *Id.* at 28.

Defendants respond that if the “storing” event were allowed to occur out of order, then the “storing” of the location in the location register would be superfluous. According to Defendants, the purpose of the location being stored in the location register is to allow the network to make a decision regarding switching based on the location. Dkt. No. 139 at 33 (citing ‘728 Patent at 3:13–15 (“The present invention can switch network paths to provide the roaming service in accordance with the location information stored in the location register.”)). On balance, the Court agrees with Defendants.

The claim language indicates that storing a location in the location register is an important event in the authentication process, and would be required before a decision is made on switching network paths. *See Mformation Techs., Inc. v. Rsch. In Motion Ltd.*, 764 F.3d 1392, 1399–1400

(Fed. Cir. 2014) (construing method claim to require an order where a step would “become superfluous” if no order were required). Indeed, the claim language explicitly numbers each step, and the disputed phrase itself recites that the first step is performed after the seventh step, which indicates a required order. Accordingly, the Court rejects Plaintiff’s argument. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

### 3. Court’s Construction

For the reasons set forth above, the Court finds that the seventh step is required to occur after and not before the sixth step. Otherwise, plain and ordinary meaning applies.

**H. “a second step of determining whether when indoor system ID information is received by the data communication terminal and the received indoor system ID information is identical to indoor system ID information stored in the location register”**

| <u>Disputed Term</u>   | <u>Plaintiff’s Proposal</u>   | <u>Defendants’ Proposal</u> |
|--|---|-----------------------------|
| “a second step of determining whether when indoor system ID information is received by the data communication terminal and the received indoor system ID information is identical to indoor system ID information stored in the location register” | <p>a second step of determining whether the received indoor system ID information is identical to indoor system ID information stored in the location register when indoor system ID information is received by the data communication terminal.”</p> <p>See AT&amp;T Case, Dkt. 104 at p. 53.</p> <p>This term is not indefinite, does not lack antecedent basis, and is enabled and discernible in the context of the claim. A person of ordinary skill in the art would understand the scope of what is claimed.</p> | Indefinite.                 |

### 1. The Parties' Positions

The parties dispute whether the inclusion of “whether when” in the second step of claim 12 makes the claim indefinite. The Court previously construed this term to mean “a second step of determining whether the received indoor system ID information is identical to indoor system ID information stored in the location register when indoor system ID information is received by the data communication terminal.” AT&T Case, Dkt. No. 104 at 52-53. Plaintiff proposes the same construction. Defendants argue that there is an additional issue of no antecedent basis for the term “received indoor system ID information.”

Plaintiff argues that the Court’s previous conclusion was correct. Dkt. No. 56 at 13 (citing ‘728 Patent at Abstract, 3:16–22, 9:40–44, 10:1–9, 11:34–42.). Plaintiff contends that the usage of the phrase “whether when” would not confuse a person of ordinary skill in the art. *Id.* at 14 (citing Dkt. No. 56-5 ¶ 55; AT&T Case Dkt. No. 104 at 53). According to Plaintiff, there is nothing confusing or unclear about this claim language. *Id.* (citing Dkt. No. 56-5 ¶ 54).

Plaintiff further argues that this step describes determining whether the received system ID information and stored system ID information are identical when the indoor system ID information is received by the data communication terminal. *Id.* Plaintiff submits that this is what the Court found in the AT&T Case. *Id.* (citing AT&T Case Dkt. No. 104 at 52; Dkt. No. 56-5 ¶ 54). Plaintiff also contends that this term is not indefinite, and the correct understanding that a person of ordinary skill in the art would have of this term is “a second step of determining whether the received indoor system ID information is identical to indoor system ID information stored in the location register when indoor system ID information is received by the data communication terminal.” *Id.* at 15.

Defendants respond that it is undisputed that this term is ambiguous on its face. Dkt. No. 57 at 15. Defendants argue that a person of ordinary skill in the art may determine that the second step refers to either when something occurs or whether something occurs. *Id.* Defendants further

argue that Plaintiff's construction presents an additional issue because there is no antecedent basis for the "received indoor system ID information." *Id.* According to Defendants, there is no claim language that precedes this term where "indoor system ID information" is received in the first place. *Id.* Defendants argue that the original language supports a construction opposite to Plaintiff's construction, and that this claim term is indefinite because the construction lacks reasonable certainty. *Id.* at 15-16 (citing '728 Patent at 9:38-44, 11:21-22, 12:56-65).

Defendants also contend that Plaintiff argues that the claim should be construed to omit the phrase "when" from the "whether when" claim language resulting in a construction for the second step where only a determination is made about whether the "received indoor system ID information is identical to the indoor system ID information stored in the location register." *Id.* at 16. Defendants argue that there is no claim language that supports receiving "indoor system ID information" in the first place. *Id.* Defendants also argue that under Plaintiff's construction any device within the system may receive "indoor system ID information." *Id.* Defendants submit that there is no implicit determination that can be made regarding antecedent basis, because Plaintiff's construction would result in failing to identify with clarity whether "indoor system ID information" is received in the first place or by whom. *Id.*

Plaintiff did not submit arguments regarding this phrase in its Reply brief.

## **2. Analysis**

The phrase "a second step of determining whether when indoor system ID information is received by the data communication terminal and the received indoor system ID information is identical to indoor system ID information stored in the location register" relates to asserted claims 12, 14, and 17-20 of the '728 Patent. Although the claim language is less than ideal, the Court finds that a person of ordinary skill in the art would understand that this step describes determining

*whether* the received and stored indoor system ID information are identical *when* the information is received by the data communication terminal.

The third step in Claim 12 confirms this by reciting, “if it is determined in the second step that the two of ID information are equal to each other.” Likewise, the specification states that “[i]n order to determine whether the wireless internet terminal is located indoors or outdoors, the wireless internet terminal determines whether ID information of an indoor system broadcasted from the indoor gateway is received, and in particular, whether the received ID information of the indoor system is equal to the stored ID information.” ‘728 Patent at 3:16-22, *see also id.* at Abstract, 9:40–44, 10:1–9, 11:34–42.

To further resolve the issue, and clarify the phrase for the jury, the Court construes the phrase to mean “a second step of determining whether the received indoor system ID information is identical to indoor system ID information stored in the location register when indoor system ID information is received by the data communication terminal.” This clarification is very similar to the specification’s statement that “upon receiving indoor system ID information, it is determined whether the received indoor system ID information is identical to stored indoor system ID information.” ‘728 Patent at Abstract.

Defendants argue that the second step is indefinite because the Court’s previous construction lacks reasonable certainty. Defendants contend that there is no antecedent basis for the “received indoor system ID information.” Dkt. No. 57 at 15. Defendants also argue that there is no claim language that indicates where “indoor system ID information” is received in the first place. *Id.* According to Defendants, if the data communication terminal never receives “indoor system ID information” a determination is never made by which the “indoor system ID information” can be compared to “indoor system ID information stored in the location register.”



*Id.* at 15-16.

Defendants further argue that there is no claim language that supports receiving “indoor system ID information” in the first place. *Id.* at 16. Thus, Defendants conclude that under the Court’s construction, any device within the system may receive “indoor system ID information.” *Id.* Finally, Defendants contend that there is no implicit determination that can be made regarding antecedent basis, because Plaintiff’s construction would result in failing to identify with clarity whether “indoor system ID information” is received in the first place or by whom. *Id.*

Contrary to Defendants’ contention, the Court’s construction is correct because it comports with the claim language and the specification. *Funai Elec. Co. v. Daewoo Elecs. Corp.*, 616 F.3d 1357, 1372 (Fed. Cir. 2010) (“An ungainly claim is not thereby indefinite, when its meaning can be understood by a person experienced in the field of the invention, on review of the patent documents.”). Specifically, the Court’s construction indicates when and by whom the “indoor system ID information” is received. The Court’s construction explicitly states that “when indoor system ID information is received by the data communication terminal,” the data communication terminal determines “whether the received indoor system ID information is identical to indoor system ID information stored in the location register.”

Moreover, the construction indicates that the data communication terminal receives the “indoor system ID information.” As discussed above, a person of ordinary skill in the art would understand the disputed phrase when considered in the context of the intrinsic evidence. ‘728 Patent at Abstract, 3:16–22, 9:40–44, 10:1–9, 11:34–42. Accordingly, the Court finds that Defendants have failed to prove by clear and convincing evidence that the phrase is indefinite. Finally, in reaching its conclusion, the Court has considered the extrinsic evidence submitted by the parties, and given it its proper weight in light of the intrinsic evidence.

### **3. Court's Construction**

For the reasons set forth above, the Court construes the phrase **“a second step of determining whether when indoor system ID information is received by the data communication terminal and the received indoor system ID information is identical to indoor system ID information stored in the location register”** to mean **“a second step of determining whether the received indoor system ID information is identical to indoor system ID information stored in the location register when indoor system ID information is received by the data communication terminal.”**

### **IV. CONCLUSION**

The Court adopts the constructions above for the disputed terms of the '728 Patent. Furthermore, the parties should ensure that all testimony that relates to the terms addressed in this Order is constrained by the Court's reasoning. However, in the presence of the jury the parties should not expressly or implicitly refer to each other's claim construction positions and should not expressly refer to any portion of this Order that is not an actual construction adopted by the Court. The references to the claim construction process should be limited to informing the jury of the constructions adopted by the Court.

**It is SO ORDERED.**

**SIGNED this 19th day of July, 2021.**

  
ROY S. PAYNE  
UNITED STATES MAGISTRATE JUDGE